

Test Report No.: SHAEC23009266410 **Date:** Jul 11, 2023 Page 1 of 13

Client Name: CSMC Technologies FAB2 CO.,LTD

Client Address: 8 Xinzhou Road, Wuxi, Jiangsu

Sample Name: 8 IN WAFER

Model No.: Advance

The above sample(s) and information were provided by the client.

SGS Job No.: SP23-011485 Sample Receiving Date: Jun 30, 2023

Testing Period: Jun 30, 2023 ~ Jul 07, 2023

Test Requested: Select test(s) as requested by the client.

Test Method(s): Please refer to next page(s).

Test Result(s): Please refer to next page(s).

Test Requirement	Conclusion
EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)	Pass
Halogen	See Results
Hexabromocyclododecane (HBCDD)	See Results
TBBP-A	See Results
Perfluorooctane Sulfonates (PFOS) and its derivatives and Perfluorooctanoic Acid (PFOA) and its salts	See Results

Signed for and on behalf of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Dora Hu

Approved Signatory

Dorathe





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Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A2	SHA23-0092664-0001.C002	Colorful silicon wafer

Remarks:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

EU RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU- Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP)

Test Method: With reference to IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017,

IEC 62321-6:2015 and IEC 62321-8:2017, analysis was performed by ICP-OES, UV-Vis

and GC-MS.

Test Item(s)	Limit	Unit(s)	MDL	A2
Cadmium(Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Polybromobiphenyl (PBBs)	1000	mg/kg	-	ND
Monobromobiphenyl (MonoBB)	-	mg/kg	5	ND
Dibromobiphenyl (DiBB)	-	mg/kg	5	ND
Tribromobiphenyl (TriBB)	-	mg/kg	5	ND
Tetrabromobiphenyl (TetraBB)	-	mg/kg	5	ND
Pentabromobiphenyl (PentaBB)	-	mg/kg	5	ND
Hexabromobiphenyl (HexaBB)	-	mg/kg	5	ND
Heptabromobiphenyl (HeptaBB)	-	mg/kg	5	ND
Octabromobiphenyl (OctaBB)	-	mg/kg	5	ND
Nonabromobiphenyl (NonaBB)	-	mg/kg	5	ND
Decabromobiphenyl (DecaBB)	-	mg/kg	5	ND
Polybromodiphenyl ether(PBDEs)	1000	mg/kg	•	ND
Monobromodiphenylether (MonoBDE)	-	mg/kg	5	ND
Dibromodiphenylether (DiBDE)	-	mg/kg	5	ND
Tribromodiphenylether (TriBDE)	-	mg/kg	5	ND
Tetrabromodiphenylether (TetraBDE)	-	mg/kg	5	ND
Pentabromodiphenylethers (PentaBDE)	-	mg/kg	5	ND
Hexabromodiphenylether (HexaBDE)	-	mg/kg	5	ND
Heptabromodiphenylether (HeptaBDE)	-	mg/kg	5	ND
Octabromodiphenylethers (OctaBDE)	-	mg/kg	5	ND
Nonabromodiphenylether (NonaBDE)	-	mg/kg	5	ND
Decabromodiphenylether (DecaBDE)	-	mg/kg	5	ND
Dibutyl Phthalate(DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate(BBP)	1000	mg/kg	50	ND



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Test Item(s)	Limit	Unit(s)	MDL	A2
Bis-(2-ethylhexyl) Phthalate(DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate(DIBP)	1000	mg/kg	50	ND

Notes:

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

<u>Halogen</u>

Test Method: With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	Unit(s)	MDL	A2
Fluorine(F)	mg/kg	20	ND
Chlorine(CI)	mg/kg	50	ND
Bromine(Br)	mg/kg	50	ND
lodine(I)	mg/kg	50	ND

Hexabromocyclododecane (HBCDD)

Test Method: With reference to IEC 62321-9:2021, analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A2
Hexabromocyclododecane (HBCDD)	134237-50-6			
	/134237-51-7			
	/134237-52-8	mg/kg	20	ND
	/25637-99-4			
	/3194-55-6			

TBBP-A

Test Method: With reference to US EPA 3540C:1996, analysis was performed by GC-MS/LC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A2
TBBP-A	79-94-7	mg/kg	10	ND

<u>Perfluorooctane Sulfonates (PFOS) and its derivatives and Perfluorooctanoic Acid (PFOA) and its salts</u>

Test Method: With reference to CEN/TS 15968:2010, analysis was performed by HPLC-MS or LC-MS/MS.



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Test Item(s)	CAS No.	Unit(s)	MDL	A2
PFOS and its derivatives	-	mg/kg	-	ND
Perfluorooctane Sulfonates (PFOS) and its salts*	-	mg/kg	0.010	ND
N-ethylperfluoro-1-octanesulfonamide (N-EtFOSA)	4151-50-2	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide (N-MeFOSA)	31506-32-8	mg/kg	0.010	ND
2-(N-ethylperfluoro-1- octanesulfonamido) -ethanol (N- EtFOSE)	1691-99-2	mg/kg	0.010	ND
2-(N-methylperfluoro-1- octanesulfonamido) -ethanol (N- MeFOSE)	24448-09-7	mg/kg	0.010	ND
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	mg/kg	0.010	ND
Perfluorooctanoic Acid (PFOA) and its salts*	-	mg/kg	0.010	ND

Notes:

(1) Perfluorooctanoic acid (PFOA) and its salts* including PFOA (CAS No. 335-67-1), APFO (CAS No. 3825-26-1), PFOA-Na (CAS No. 335-95-5), PFOA-K (CAS No. 2395-00-8), PFOA-Ag (CAS No. 335-93-3) and PFOA-F (CAS No. 335-66-0). The result of PFOA is used to represent PFOA and its salts.

(2) Perfluorooctane sulfonates (PFOS) and its salts* including PFOS (CAS No. 1763-23-1), POSF(CAS No. 307-35-7), PFOS-K (CAS No. 2795-39-3), PFOS-NH4 (CAS No. 29081-56-9), PFOS-N(C₁₀H₂₁)₂(CH₃)₂ (CAS No. 251099-16-8), PFOS-NH₂(C₂H₄OH)₂ (CAS No. 70225-14-8), PFOS-Li (CAS No. 29457-72-5), PFOS-N(C₂H₅)₄ (CAS No. 56773-42-3) and PFOS-Na (CAS No. 4021-47-0). The result of PFOS is used to represent PFOS and its salts.

Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019.



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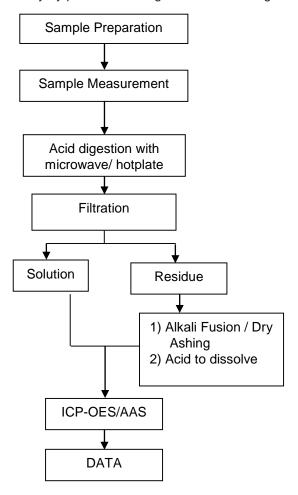
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Elements Testing Flow Chart

Name of the person who made testing: Meria Jin/Sielina Song Name of the person in charge of testing: Luna Xu/Bob Zhang

These samples were dissolved totally by pre-conditioning method according to below flow chart.





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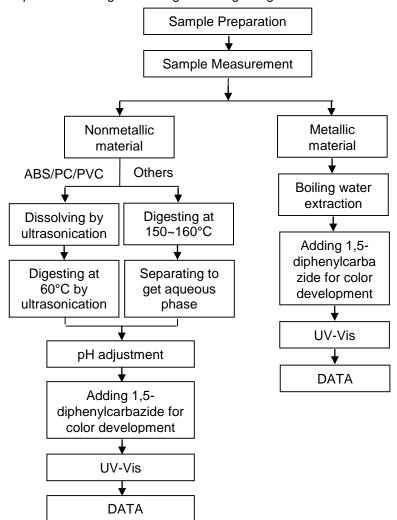


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Hexavalent Chromium (Cr(VI)) Testing Flow Chart

Name of the person who made testing: Alex Wang Name of the person in charge of testing: Xiaolong Yang





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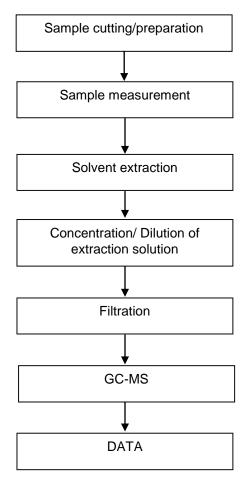


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PBBs/PBDEs Testing Flow Chart

Name of the person who made testing: Gary Xu Name of the person in charge of testing: Brin Feng





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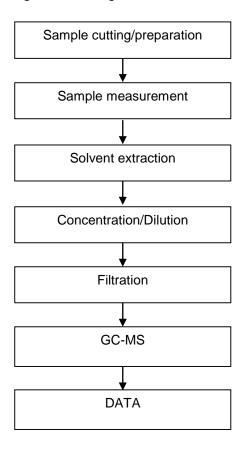


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Phthalates Testing Flow Chart

Name of the person who made testing: Iris Han Name of the person in charge of testing: Jason Zhang





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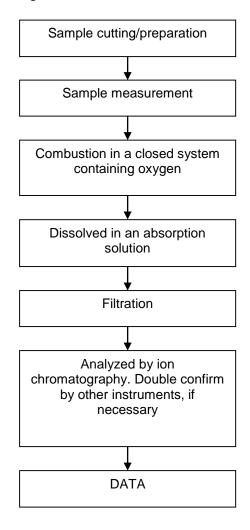


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Halogen Testing Flow Chart

Name of the person who made testing: Andy Zhang Name of the person in charge of testing: Allen Chen





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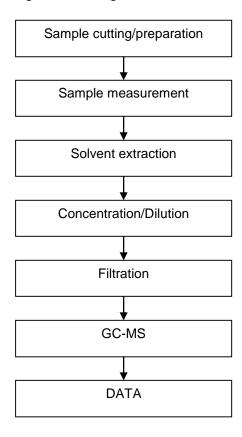


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HBCDD Testing Flow Chart

Name of the person who made testing: Gary Xu Name of the person in charge of testing: Jason Zhang





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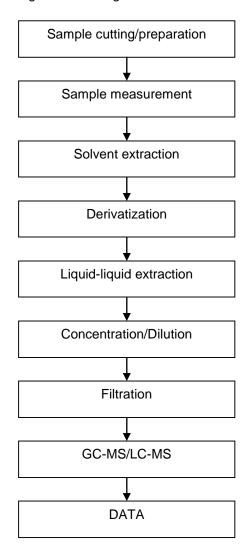


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TBBP-A Testing Flow Chart

Name of the person who made testing: Gary Xu Name of the person in charge of testing: Jason Zhang





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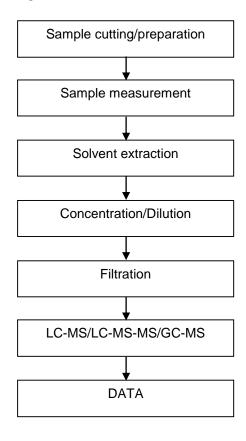


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PFASs/ PFOS/PFOA Testing Flow Chart

Name of the person who made testing: Mia Zeng Name of the person in charge of testing: Richer Yu





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Sample Photo:



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